## DATASHEET - M22-CK20



Contact element, Cage Clamp, Front fixing, 2 N/O, 24 V 3 A, 220 V 230 V 240 V 4 A





Part no. M22-CK20 Catalog No. 107898 Alternate Catalog M22-CK20Q No. 4355494 **EL-Nummer** (Norway)

## **Delivery program**

Delivery program	
Product range	Accessories
Basic function accessories	Contact elements
Accessories	Auxiliary contact
Accessories	Standard auxiliary contact, trip-indicating auxiliary switch
Standard/Approval	UL/CSA, IEC
Construction size	NZM1/2/3/4
Description	When using emergency switching off actuators M22-PV max. 2 contact elements = 4 NC / N/O contacts Cage Clamp is a registered trademark of Wago Kontakttechnik GmbH/Minden, Germany
Connection technique	Cage Clamp
Fixing	Front fixing
Degree of Protection	IP20
Connection to SmartWire-DT	no
For use with	NZM1(-4), 2(-4), 3(-4), 4(-4) PN1(-4), 2(-4), 3(-4) N(S)1(-4), 2(-4), 3(-4), 4(-4)
Approval	ET 16107 Sicherheit geprüft tested safety
Contacts	
N/O = Normally open	2 N/O
Contact sequence	$\begin{array}{c} 1.3 \\ 1.4 \\ 1.4 \end{array}$
Contact travel diagram, stroke in connection with front element	
Contact diagram	0 3.6 5.5
Connection type	Double contact
Description of HIA trip-indicating auxiliary contact	General trip indication '+', when tripped by shunt release, overload release, short- circuit release or by the residual-current release due to residual-current.

	Can be used with NZM1, 2, 3 circuit-breaker: a trip-indicating auxiliary contact can be clipped into the circuit-breaker. Can be used with NZM4 circuit-breaker: up to two standard auxiliary contacts can be clipped into the circuit-breaker. Any combinations of the auxiliary contact types are possible. Not in combination with switch-disconnector PN Marking on switch: HIA Labeling in FI-Block: HIAFI. If the trip-indicating auxiliary switch in the fault current block is used, the NC contacts operates as a N/O contact and the NC contact operates as an N/O contact.
Description standard auxiliary contact HIN	Switching with the main contacts Used for indicating and interlocking tasks. Can be used with NZM1 circuit-breaker: a standard auxiliary contact can be clipped into the circuit-breaker. Can be used with NZM2 size circuit-breaker: a standard auxiliary contact can be clipped into the circuit-breaker. Can be used with NZM3, 4 circuit-breaker: up to three standard auxiliary contacts can be clipped into the circuit-breaker. Any combinations of the auxiliary contact types are possible. Marking on switch: HIN. On combination with remote operator NZM-XR the right mounting location of standard auxiliary contact HIN can be fitted only with individual contacts.
Connection technique	Cage Clamp
Notes	

The following can be clipped into the switches:

- NZM1: a standard auxiliary contact
  NZM2: up to two M22-(C)K... standard auxiliary contacts
  NZM3: up to three M22-(C)K... standard auxiliary contacts
  NZM4: up to three M22-(C)K... standard auxiliary contacts

Any combinations of the auxiliary contact types are possible.

Marking on switch: HIN

In combination with remote operator NZM-XR... only single contacts can be fitted to some installation locations of the standard auxiliary contact.

NZM2: Only single contact can be fitted in left installation location of standard auxiliary contact.

NZM3: Only single contact can be fitted in installation locations of standard auxiliary contact.

NZM4: Only single contact can be fitted in right installation location of standard auxiliary contact.

## **Technical data**

hereing frequency of persistency of	General			
Kukuaing force         n         5         1           Degree of Protection         amp heat, constant, to ICC 60068-2-30         Bamp heat, constant, to ICC 60068-2-30           Aubient temperature         amp heat, constant, to ICC 60068-2-30         Bamp heat, constant, to ICC 60068-2-30           Aubient temperature         removed to the second temperature         Solid         Solid           Open         removed temperature         Solid         RmP         Solid           Solid         man2         Sol-15         Solid         man2         Solid           Solid         man2         Solid         man2         Solid         S	Standards			IEC 60947-5-1
Depend Protection         Page         Page         Page           Depend Protection         Page         Page Peat constant, to IEC 60068-2-30 Pamphaet, cyclic, to IEC 60068-2-30 Pamphaet, cyclic, to IEC 60068-2-30           Open         Page         Page         Page           Open         Page         Page         Page           Solid         Page         Page         Page           Forbuse with strue down of target         Page         Page         Page           Solid constant, strue down of target         Page         Page         Page           Solid constant, strue down of target         Page         Page         Page           Solid constant, strue down of target         Page         Page         Page           Solid constant, strue down of target         Page         Page         Page           Solid constant, strue down of target         Page         Page         Page           Solid c	Operating frequency	Operations/h		≦ 3600
Inatic proofing     Impleat. constant, to IEC 60088-2-38 Impleat, constant, to IEC 60088-2-38       Impleat, constant, to IEC 60088-2-38 Impleat, constant, to IEC 60088-2-38       Impleat, constant, to IEC 6008-2-38       Impleat, constant, to IEC 6008-	Actuating force		n	≦ 10
Andient emperature         Pamp heat, cyclic, to IEC 60068-2:30           Ambient temperature         Pamp heat, cyclic, to IEC 60068-2:30           Open         Solid           Open         Solid           Solid         Man2           Solid         ma <sup>2</sup>	Degree of Protection			IP20
OpenInternal capacitiesInternal capacitiesI	Climatic proofing			
Arrive capacitiesMathematical capacitiesMathematical capacitiesMathematical capacitiesSolidMathematical capacities5-15StandedMathematical capacities5-15Fexible with feruleMathematical capacities5-15Fexible with feruleMathematical capacities5-15StandedMathematical capacities5-15StandedMathematical capacities5-15Standed insulation voltageMathematical capacities400Nervoltage category/pollution degreeMathematical capacities10Standed insulation voltageMathematical capacities10Nervoltage category/pollution degreeMathematical capacities10Standed insulation voltageMathematical capacities10Nervoltage category/pollution degreeMathematical capacities10Standed insulation voltageMathematical capacities10Nervoltage category/pollution degreeMathematical capacities10At 24 V DC/s MAMathematical capacities10At 24 V DC/s MAMathematical capacities10At short-circuit protective deviceMathematical capacities10FuselesMathematical capacities1010FuselesMathematical capacities10North-circuit protective device1010Mathematical capacitiesMathematical capacities10North-circuit protecties1010Mathematical capacities1010Mathematical capacities10	Ambient temperature			
Number     Number       Solid     nm     fm       Stranded     nm     5 - 1.5       Fexible with ferrule     nm     0 - 1.5       Forbact     nm     0 - 1.5       Solid     Nm     Nm       Solid     Nm     Solid       Solid     Solid     Nm       Solid     Solid     Solid       Solid     Solid     Solid       Solid     Solid     Solid       Solid     Solid     Solid       Solid	Open		°C	-25 - +70
Stranded         Imm         Im	Terminal capacities		mm <sup>2</sup>	
Fexible with ferrule     Image of the second s	Solid		mm <sup>2</sup>	0.5 - 1.5
Contacts         VAC         Made inpulse withstand voltage         Jimp         VAC         400           Rated inpulse withstand voltage         Ui         V         250         250           Dvervoltage category/pollution degree         III/3         III/3         III/3           control circuit reliability         Feat         For probability         10 <sup>3</sup> at 24 V DC/5 mA         HF         Fault probability         5 × 10 <sup>-6</sup> (i.e. 1 failure to 10 <sup>7</sup> operations)           at 5 V DC/1 mA         HF         Fault probability         5 × 10 <sup>-6</sup> (i.e. 1 failure in 5 × 10 <sup>6</sup> operations)           Max. short-circuit protective device         Fuse         Fuse         Nu         PKZM0-10/FAZ-B6/1           Fuse category         gG/gL         A         10         A           Witching capacity         Ie         A         A	Stranded		mm <sup>2</sup>	0.5 - 1.5
Name       Nam       Name       Name	Flexible with ferrule		mm <sup>2</sup>	0.5 - 1.5
Rated insulation voltage     Vi     Vi     Solution degree       Deveroltage category/pollution degree     III/3       Control circuit reliability     III/3       at 24 V DC/5 mA     HF     Salt probabil probabil probabil     Solution to 10 <sup>7</sup> operations)       at 5 V DC/1 mA     HF     Salt probabil     Solution to 10 <sup>7</sup> operations)       Max.short-circuit protective device     Face     Solution       Fuse     Solution     Ye     McXMO-10/FAZ-B6/1       Fuse     Solution     Solution     Solution       Switching capacity     Ie     A     Solution	Contacts			
Derivoltage category/pollution degree     III/3       Control circuit reliability     III/3       at 24 V DC/5 mA     Face     Fault probability       at 5 V DC/1 mA     Face     Fault probability       Max. short-circuit protective device     Face     Fault probability       Fuseless     Type     PKZM0-10/FAZ-B6/1       Fuse     g6/gL     A     10       Switching capacity     Ie     A	Rated impulse withstand voltage	U <sub>imp</sub>	V AC	4000
Control circuit reliability     Image: Control circuit reliability       at 24 V DC/5 mA     HF       at 5 V DC/1 mA     HF       Aux. short-circuit protective device     Fault probability       Fuseless     Type       Fuse     gG/gL       Agade operational current     Ie	Rated insulation voltage	Ui	V	250
at 24 V DC/5 mAHFFault probabilityFoult probabilityfoult 	Overvoltage category/pollution degree			111/3
at 5 V DC/1 mAHFFault probability5 x 10 <sup>-6</sup> (i.e. 1 failure in 5 x 10 <sup>6</sup> operations)Max. short-circuit protective device	Control circuit reliability			
Max. short-circuit protective device     Type       Fuse     gG/gL       Age	at 24 V DC/5 mA	H <sub>F</sub>		< 10 <sup>-7</sup> (i.e. 1 failure to 10 <sup>7</sup> operations) Y
Fuseless     Type     PKZM0-10/FAZ-B6/1       Fuse     gG/gL     A     10       Switching capacity     Ie     A	at 5 V DC/1 mA	H <sub>F</sub>		< 5 x 10 <sup>-6</sup> (i.e. 1 failure in 5 x 10 <sup>6</sup> operations) Y
Fuse     gG/gL     A     10       Switching capacity     Ie     A	Max. short-circuit protective device			
Rated operational current le A	Fuseless		Туре	PKZM0-10/FAZ-B6/1
Rated operational current Ie A	Fuse	gG/gL	А	10
	Switching capacity			
AC-15	Rated operational current	le	А	
	AC-15			

115 V	le	A	4
220 V 230 V 240 V	l <sub>e</sub>	A	4
DC-13	U C		
24 V	le	A	3
42 V	l <sub>e</sub>	A	1
60 V	le	A	0.8
110 V	l <sub>e</sub>	A	0.5
220 V			0.3
uxiliary contacts	l <sub>e</sub>	A	0.3
ated operational voltage	Ue	V	
Rated operational voltage	Ue	V AC	230
Rated operational voltage, max.	Ue	V DC	220
prventional thermal current	I <sub>th</sub> = I <sub>e</sub>	CSA	4
ated operational current	l <sub>e</sub>	A	
Different rated operational currents when used as auxiliary contact for NZM	.6		M22- M22- XHIV
circuit-breaker			(C)K10(01)CK11(02)
			(20) bei
			AC = 50/60
			Hz
			Bemessungsbetriebsstrom AC-1315 le A 4 4 4
			V
			230 le A 4 4 4 V
			400 le A 2 - 2 V
			500 le A 1 - 1
			V DC-1324 V le A 3 3 3
			42 V le A 1.7 1 1.5 60 V le A 1.2 0.8 0.8
			110 le A 0.6 0.5 0.5
			V 220 le A 0.3 0.2 0.2
			V
ort-circuit protection			
max. fuse		A gG/gL	
Max. miniature circuit-breaker		A	FAZ-B6/B1
perating times			
			Early-make time of the HIV compared to the main contacts during with make break switching.
			(switch times with manual operation):
			NZM1, PN1, N(S)1: ca. 20 ms
			NZM2, PN2, N(S)2: ca. 20 ms
			NZM3, PN3, N(S)3: ca. 20 ms
		2	NZM4, N(S)4: approx. 90 ms, the HIV switch early <b>Off</b> switching <b>not</b> forward.
erminal capacities		mm <sup>2</sup>	
Solid or flexible conductor, with ferrule		mm <sup>2</sup>	1 x (0,5 - 1,5) 2 x (0,5 - 0,75)
		AWG	1 x (20 - 18)
			2 x (20 - 18)
ther technical data (sheet catalogue)			Maximum equipment and position of the internal accessories

Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	4
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.05
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70

C/EN 61439 design verification	
10.2 Strength of materials and parts	
10.2.2 Corrosion resistance	Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures	Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat	Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects	Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation	Meets the product standard's requirements.
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9 Insulation properties	
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## **Technical data ETIM 7.0**

	1	
Electric engineering, automation, process control engineering / Low-voltage switch ecl@ss10.0.1-27-37-13-02 [AKN342013])	h technology / Compo	onent for low-voltage switching technology / Auxiliary switch block
Number of contacts as change-over contact		0
Number of contacts as normally open contact		2
Number of contacts as normally closed contact		0
Number of fault-signal switches		0
Rated operation current le at AC-15, 230 V	А	6
Type of electric connection		Spring clamp connection
Nodel		Top mounting and integrable
Nounting method		Front fastening
amp holder		None

Product Standards	IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94-91; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	012528
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified
Degree of Protection	UL/CSA Type: -



Additional product mornation (mixs)	
DGUV Test Mark Customer Information	http://www.dguv.de/medien/dguv-test-medien/_pdf_zip_doc_ppt/agb-und-pzo/ dguv_test_zeichen_infoblatt_kunden.pdf
Maximum equipment and position of the internal accessories	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.178